FIG I.—THE BALLOON UPON ITS JOURNEY.

capable of supporting, without rupture, a pressure of 6,400 pounds to the square yard.

The balloon, which is spherical in shape, will contain an immense internal balloon so constructed as to be perfectly and permanently inflated by 3,250 cubic yards of gas under the same pressure. This is intended to remedy, in great part, the grave inconveniences—the chief cause of balloon instability—which result from hygrometric and thermometric variations produced by altitude changes. The interior balloon is furnished with two valves of automatic certainty which will be in communication with a ventilator moved by electric action. If the gas becomes thinner, the interior balloon can be depleted. If it becomes thicker the interior balloon can be inflated. The "Sivel" is thus always inflated. The internal balloon represents about one-fifth of the entire balloon, a needed proportion, since balloons raised 2,700 feet lose about one-tenth of their gas, independently of the loss occasioned by temperature variation. The "Sivel" will carry several pilot balloons to be used in studying aerial currents, and sixteen balloonets to supply, through its valves, the gas of the interior balloon of